

Early Detection of AMD (Age Related Macular Degeneration)

AMD damages and destroys the central vision of up to 1 in 3 Americans in their lifetime and has no known cause or cure.



By the year 2025 the population of people over the age 65 in the U.S. will be 6 times higher than in 1990. AMD will soon take on aspects of an epidemic.

(Carl Kupfer, MD, Director NEI/NIH)

Research to Prevent Blindness (RPB)
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Could Increased Choroidal Blood Flow Stem the Development of AMD

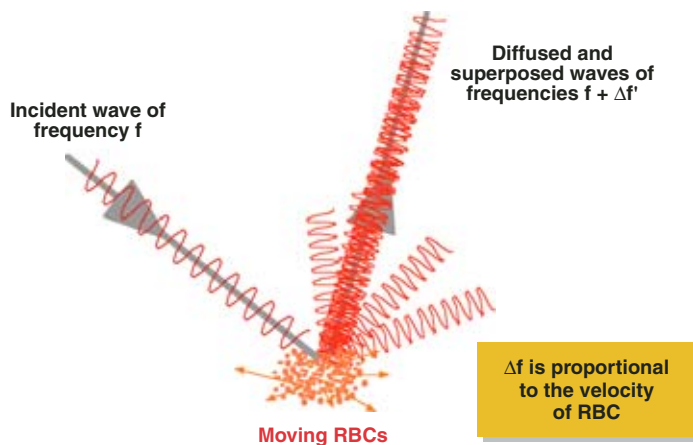
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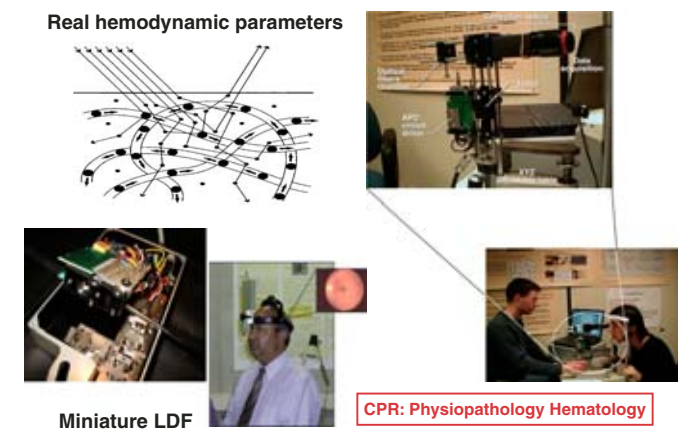
Studied 20 Patients with early stage of AMD (white deposits of waste materials behind the retina)

- Reduced blood flow through the choroid may play a role in the development of AMD
- New treatment modalities that could enhance the circulation of the choroid could be used to cure AMD

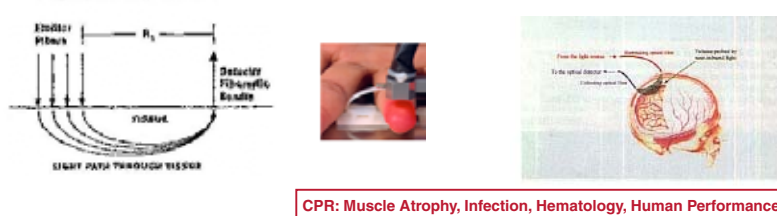
Doppler Effect on Moving Red Blood Cells



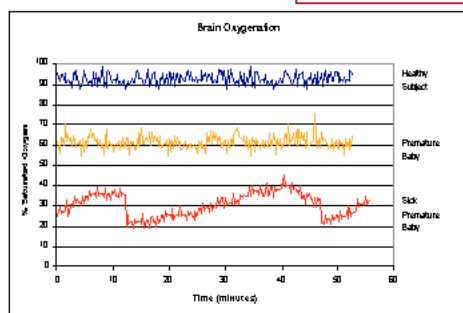
Retinal Laser Doppler Blood Flow (LDF) Meter (Under Development)



Tissue Oximetry and Functional Brain Imaging



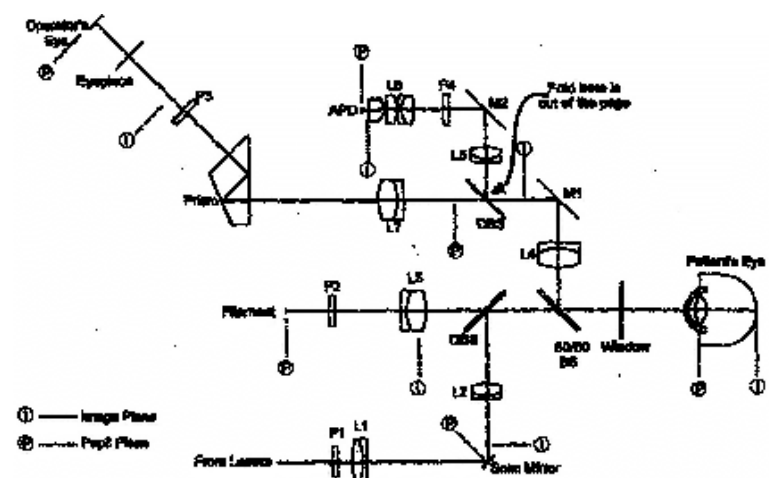
CPR: Muscle Atrophy, Infection, Hematology, Human Performance



Hoshi, et al., American Lab, October, 2001

Compact Multi-Wavelength Retinal Oximeter

- Retinal vessel oxygen saturation has been suggested as a parameter for monitoring a wide range of conditions including occult blood loss and a variety of ophthalmic diseases such as diabetic retinopathy (F. Delori, 1988)
- The arteries and veins of the human retina are not covered by thick layers of highly scattering tissue and can be directly imaged through the pupil of the eye. This optical accessibility has prompted several investigators to develop devices to measure the oxygen saturation of the blood within these vessels (L.C. Heaton, 2000).



CPR: Hematology, Trauma, O-G Physiopathology